

Analysis Competition

There are two data analysis competitions as described below.
For inquiries please contact the organizers of these challenges.

Challenge 1: Biomag 2014 Decoding Challenge: Brain Decoding Across Subjects (DecMeg2014)

Organizers: Emanuele Olivetti, Seyed Mostafa Kia and Paolo Avesani (NeuroInformatics Lab, Bruno Kessler Foundation and University of Trento, IT), e-mail: decmeg2014@list.fbk.eu

Scientific steering committee: Ole Jensen (Donders Institute, NL), Nathan Weisz (University of Trento, IT), Richard Henson (MRC/CBU, UK) and Alexandre Gramfort (Telecom ParisTech, CNRS, CEA / Neurospin)

Decoding mental states from functional neuroimaging data is a data analysis paradigm adopted both in neuroscience studies and in brain-computer interface applications. Decoding means determining, from the recorded brain activity, what stimulus was provided to a subject. In this competition, a large number of trials, from a face vs. scrambled face visual task, are available from multiple subjects. The brain activity was recorded by means of magnetoencephalography (MEG). MEG recordings from various subjects and the category of the associated visual stimuli are given to the participants of the competition in order to train their prediction algorithms. With their algorithms, the participants will have to predict the category of the stimulus of a different set of MEG recordings, from other subjects. Each submission to the competition will be scored according to the accuracy of prediction. Decoding across subjects is a difficult task because of the variability in head shape, cortical folding and functional organisation. For MEG data, the literature on decoding across subjects is still in early stages and this competition aims at raising the awareness about this complex scientific problem.

The competition begins: April 21st, 2014.

Competition website: <https://www.kaggle.com/c/decoding-the-human-brain>

The competition ends: July 27th, 2014.

Prizes: 1st 3,000 USD; 2nd 1,500 USD; 3rd 500 USD.

The awards of this competition are funded by **Elekta Oy**, **MEG International Services Ltd (MISL)**, **Fondazione Bruno Kessler** and **Besa GmbH**.



Challenge 2: Causality Challenge

Organizers: Andreas Daffertshofer, (MOVE Research Institute Amsterdam, Faculty of Human Movement Sciences, VU University Amsterdam, e-mail: a.daffertshofer@vu.nl) and Guido Nolte (Dept. of Neurophysiology and Pathophysiology, UKE Hamburg, e-mail: g.nolte@uke.de)

Estimating direct causal interactions can be considered as the ultimate and most difficult goal in brain connectivity analysis. In many situations one can make the reasonable assumption that a few signals of interest are well separated from each other but additional noise remains and may confound the estimates. The task of this challenge is to find all direct causal connections for 1000 simulated data sets corresponding to the described situation for three sources. All details can be found [here](#) The challenge is already open. Deadline August 1, 2014.